U.S. Army Corps of Engineers
Spring Valley Restoration Advisory Board Meeting
St. David's Episcopal Church
Minutes of the March 11, 2008 RAB Meeting

RESTORATION ADVISORY BOARD MEMBERS PRESENT AT THIS MEETING	
Dan Noble	Military Co-Chair/USACE, Spring Valley MMRP Manager
Greg Beumel	Community Co-Chair
Mario Aguilar	Community Member
Mary Bresnahan	Community Member
David Feary	Community Member
Steven Hirsh	US EPA Region 3
William Krebs	Community Member
Lee Monsein	Community Member
Malcolm Pritzker	Community Member
Bernard Schulz	American University
James Sweeney	District of Columbia, Department of the Environment
George Vassiliou	Community Member
Bert Weintraub	Community Member
John Wheeler	Community Member
RESTORATION ADVISORY BOARD MEMBERS NOT PRESENT	
Dr. Peter deFur	Environmental Stewardship Concepts/RAB TAPP Consultant
Lawrence Miller	Community Member
Ambassador Howard Schaffer	Community Member
ATTENDING PROJECT PERSONNEL	
Ed Hughes	USACE, Spring Valley Program Manager
Carrie Johnston	USACE, Spring Valley Community Outreach Program Manager
Maya Courtney	USACE, Spring Valley Community Outreach Program
Jessica Bruland	Earth Resources Technology
Demaree Hopkins	Weston Solutions, Inc.
Rusty Fendick	PM Non-Stockpile, Aberdeen Proving Ground, MD

HANDOUTS FROM THE MEETING
I. Final Agenda for the March 2008 RAB meeting. II. Handout of Corps of Engineers Presentation.

I. Administrative Issues

1. Co-Chair Updates

Greg Beumel, Community Co-Chair, welcomed the group and asked for updates from the RAB Task Groups.

RAB Task Group Updates

a. Science Task Group

David Feary, Community Member, requested an update on the progress of the TAPP funding request that supports Dr. Peter deFur's participation on the RAB and at the Partnering meetings.

Ed Hughes said that the RAB 2008 TAPP fund request is moving forward. The USACE Headquarters has endorsed the request and sent it to the Assistant Chief of Staff for Installation Management (ACSIM). Once ACSIM endorses it, it will then go to the Pentagon for final approval. Ed has spoken with people in the two offices to let them know that it needs to move as quickly as it can. It took about 2 months in 2005 to progress to final signature from the present stage of the process.

G. Beumel stated that is why Peter deFur was not in attendance.

b. Membership Task Group

Malcolm Pritzker, Ambassador Howard Schaffer, and Lee Monsein, Community Members, recommended George Vassiliou as a new voting member of the RAB.

Upon his arrival at the meeting, the RAB unanimously voted to elect George Vassiliou as a new voting member.

G. Beumel asked that G. Vassiliou find a replacement Horace Mann Representative, and turned the meeting over to Dan Noble who presented the agenda.

Agenda

a. Introduce Guests

Rusty Fendick from the Edgewood Arsenal, MD, PM Non-Stockpile is present to discuss the Explosives Destruction System (EDS) system and answer questions about general disposal issues.

Capt. White, who has been the Site Operations Officer since last May, is leaving the Army on April 4th. Paul Green from the Explosives Safety Section of the Baltimore USACE will take over the duties of Site Operations Officer. He has been responsible for safety oversight for conventional and chemical munitions sites. For example, he was Site Manager for Lauderick Creek site at Edgewood, a 4-year project removing unexploded ordnance. He also oversaw the Clamshell Project in Dover. P. Green has been in the explosives business for over 30 years, and has been with USACE for 5 years where he was recently assigned as the Explosives Safety Manager for the District.

Officer McElwee and Lt. Hayes of the District of Columbia Metropolitan Police Department (MPD) introduced themselves and summarized their involvement with the Spring Valley Project. MPD involvement at the site occurs only if the siren sounds or if an unauthorized person tries to enter the site. In the event of a shelter-in-place event, the MPD responsibility is to control entering/exiting traffic and collect identifying information from people leaving the area so everyone is accounted for. During any excavation periods, MPD special operations personnel are on-site. The officers invited Paul Green to speak to each of the shift rollcalls as officers come on-duty.

Question from Charlie Bermpohl, Audience Member – Was there an intruder at the site about 6 weeks ago?

Lt. Hayes said he had not received any report of it.

b. Announcements

The minutes from the November 2007 RAB meeting are on the website.

c. Public Safety Building Investigation Presentation

D. Noble provided a brief outline on the Public Safety Building Investigation at American University which is expected to begin May 19 after graduation. The work will be conducted as a low-probability investigation and is expected to take a minimum of 18 weeks

A **Map of the Public Safety Building Area** was shown.

The plan for the Public Safety Building area is to remove three clusters of single point anomalies in the front of the building, dig three exploratory trenches in two anomalous areas, and remove debris in an area near the back of the building that was not excavated during the Lot 18 Investigation. To maintain the integrity of the building for the upcoming effort in the back of the building, an interceptor trench will be dug to constantly pump and remove the perched groundwater up near the surface. The debris area in the back of the building will be excavated and backfilled one trench at the time time, starting away from the building and excavating up to the building. The details of the work plan will be discussed further as the start date approaches.

Question from D. Feary, Community Member – Was the issue resolved regarding whether the source of the excess water at Lot 18 was a leak or groundwater?

E. Hughes said that USACE believes it is groundwater, not a leaking water pipe.

Question from Mary Bresnahan, RAB Community Member – Wasn't the groundwater contaminated with perchlorate?

D. Noble said the water at Lot 18 had some contamination, but it was unclear whether the water was contaminated prior to entering Lot 18.

E. Hughes said that there are low levels of perchlorate in the stream, at a concentration of a couple of parts per billion. The area is below the part of campus where the highest levels of perchlorate have been sampled.

D. Noble said that as the water is pumped out during the upcoming investigation, it will be collected in tanks and tested prior to disposal.

II. USACE Issues

1. Hazardous/Toxic Waste (HTW)

E. Hughes provided updates on arsenic sampling and removal, the groundwater study, and the phytoremediation study.

a. Arsenic Sampling and Removal

One previously unsampled property on Glenbrook Road was screened in January and requires no further arsenic remediation. Approximately 97% of the over 1,500 properties in Spring Valley have been sampled for arsenic and many of them for many other chemicals also. Those remaining are properties where owners have not permitted access for sampling.

Since the February meeting, one residential arsenic cleanup was completed and two more properties were started.

Photographs were shown of the properties in various stages of remediation.

b. 2008 Planning: Groundwater Investigation Update

The Groundwater Partnership Working Group met on February 26th to start developing the plan for this year's study efforts. The groundwater has been studied for the last several years. A list of 260 analytes was developed based on the 165 chemicals used on the site and on the standard methods list. Elevated levels of perchlorate were sampled in two project areas: one in the western part of the FUDS near Sibley Hospital and another on the American University campus.

The Groundwater Partnership Working Group Focus Areas are as follows:

- The Glenbrook Road/Rockwood Parkway Area is the primary area of focus. The group is considering installing more shallow wells and at least one deep well in this area.
- 52nd Court is the site of the initial munitions find in 1993. Access to the property has not been granted and there is no city easement available because the streets are owned by the homeowner's association. Dialogue with the homeowner has been difficult. USACE will re-issue the letter of request and make adjustments to the right-of-entry document. Alternative well locations are being explored such as an existing District of Columbia well off Dalecarlia Parkway.
- Reservoir Area is another focus area in the groundwater study. The working group will continue studying existing well samples near the reservoir, although there does not appear to be a current or future threat to the reservoir. The working group is also considering installing a deeper well near the reservoir.

The working group is also looking into the possibility of performing perchlorate chemical isotope signature analyses to see if there is a match between the perchlorate in the area of Sibley Hospital and the perchlorate in the Glenbrook Road/Rockwood Parkway area.

Question from Malcolm Pritzker, Community Member – What are the options for 52nd Court if the homeowners continue to object to the sampling?

E. Hughes said that USACE, the regulators and their legal departments would be involved in looking into the option of enforcement. The legal departments will be involved in drafting the letter that will be sent.

S. Hirsh said that the EPA legal group has been involved for quite some time and the Agency has sent several letters. The Partners thought they understood the owner's concerns, and the property owner has separated the two properties, but access has still not been granted. It was recommended that one more letter be written, stating that if they receive no response, it will be taken as a denial of access. The working group discussed alternative locations for the well. The recommendation of the hydrogeologists is to put in wells in two alternative locations. However, the project managers are concerned that results from the two wells may not provide helpful information, and the hydrogeologists will still have unanswered questions next year and request that original proposed well be installed. The project managers would like the well installed in the original location this year.

Question from J. Wheeler, Community Member – What is the enforcement option?

S. Hirsh said there is an option to procure a warrant. It is not easy, and is not the most desirable action, but that may be where the progress is headed.

Question from Mary Bresnahan, Community Member – Has the community board in Spring Valley West been brought into the discussion?

E. Hughes noted that USACE met with all the residents of the cul-de-sac in September 2005.

c. 2008 – Phytoremediation Study Update

E. Hughes presented the update for phytoremediation. Various fern varieties have been tested for the past 4 years as an alternative approach to arsenic remediation. The *Pteris vittata (P. vittata)* ferns seemed to be the most effective in removing arsenic from the soil. Ferns were planted at six properties in 2007, with 19 plots and 4,000 ferns. Improved sampling techniques continued to be used to maximize sampling accuracy.

A mass balance study was incorporated into the study activities to estimate the difference in the amount of arsenic by mass that is in the soil between May and September. A mass balance study measures the amount of arsenic that is in the plant tissues, estimates the yield of biomass and measures a correlation between the mass of arsenic in the plants and the change in the amount of arsenic in the soil. In theory, the amounts should be equal.

Photographs were shown of **Fern Growth at an Upton Street** property, at **Lot 15 on Van Ness Street**, and at a property on **Rockwood Parkway**.

Last year, 2007, was the best year so far for plant growth with some ferns growing as tall as 3 feet. Plant uptake of arsenic and biomass yields were greater in 2007 than in 2006, but some plots exhibited an inexplicable increase in arsenic levels from May to September. *P. vittata* exhibited a strong correlation between growth and to exposure to sunlight. The fern growth did not necessarily mean increased remediation. One plot (Upton) tested below the cleanup goal (20 mg/kg) in the Fall and is considered complete.

The mass balance results were not conclusive in attributing soil arsenic reductions to fern activity. The low total arsenic measured in most site soils favored limited uptake in the plants due to an even lower amount of total arsenic being available for uptake by the ferns. Greater uptake and biomass yields are needed to accelerate removal of arsenic from site soils to below 20 parts per million (ppm).

In 2008, the 30-part sampling approach will continue. The spacing of the plants will be decreased to 8-inches between plants instead of 12-inches, which is 25 plants per square meter instead of 11 plants. Plans are to continue field testing at three or four of the study locations, as long as the property owners are interested in continuing with the program. Planting will take place in May.

Question from John Wheeler, Community Member – Why would some of the arsenic not be available to the fern?

E. Hughes replied that the bioavailability of the arsenic in the soil was studied when USACE performed the neighborhood-wide sampling. The study was not conclusive, but it seemed that 30% to 50% of the arsenic in the soil will not get into biological systems because it is not available chemically.

Question from G. Vassiliou, Community Member – What are the levels of arsenic concentration before treating an area with phytoremediation or with soil removal, and what are the levels afterwards?

E. Hughes said the neighborhood-wide cleanup goal for arsenic is 20 ppm. Less than 10% of the more than 1,500 sampled properties yielded results above the cleanup goal. USACE has been involved with remediating the contaminated soil since 2002. On residential properties, the highest concentration was 613 ppm. Concentrations in the thousands of parts per million have been seen in the disposal pits, on Lot 18, and at the Child Development Center at American University. In the phytoremediation study, the highest levels have been around 200 ppm. In some cases, the soil has been cleaned down to 43 ppm, with permission from the property owner, if there is concern about saving a tree.

Question from G. Vassiliou, Community Member – So this is a measurement of the topsoil taken after you have removed the topsoil and treated the area?

E. Hughes stated that the soil is excavated down to 2 feet and the bottom and the sidewalls of the area are sampled. If any of those levels are over 20 ppm, digging continues until the sample results test below 20 ppm. The team rarely needs to excavate down more than 2 feet, because the contamination has essentially been near the surface.

Question from Kent Slowinski, Audience Member – Which plots showed an increase in arsenic?

E. Hughes said he would have to check the report. He was not sure which ones did.

K. Slowinski, Audience Member recalled that in the past the plots near the Van Ness reservoir had shown an increase.

E. Hughes agreed that some of them had.

Question from K. Slowinski, Audience Member – What will be done if the debris goes under the Public Safety Building.

D. Noble said there are no current plans to go under the building. This effort is Phase 2. It will help the USACE determine whether debris does extend under the building and if a Phase 3 effort is necessary.

Military Munitions Response Program (MMRP)

D. Noble presented information on **OU-3 Area** activities including the test pits investigation, the investigation under the ECS, and disposal options for the recovered munitions.

a. Test Pit Investigation Monthly Update

D. Noble stated that 54 Test Pits have been completed to date. The team has nearly completed the test pitting in the back yard and front yard. The test pits in the driveway area remain. The crew has been removing the asphalt from the driveway.

Arsenic grids also need to be removed at the current property, and the team has completed removing 3 grids to date. He showed a map of the **Completed Test Pits to Date and Arsenic Grids** and those remaining to be dug. As the asphalt in the driveway was removed, the soil was tested for arsenic. The majority of the area under the driveway tested above 20 ppm. The plan is to excavate 2 feet in the entire driveway area and remove the arsenic-contaminated soil, then finish the 18 test pits in the driveway area. The remaining work will be to dig five test pits and remove an arsenic grid on the narrow strip between the property line and the house, which will need to be accessed from the area which is now being used by workers at the high-probability dig next door. Arsenic remediation is expected to be complete in early May, before work starts on the Public Safety Building. This crew will begin work on the Public Safety Building. Once the high-probability work is finished under the Explosives Containment Structure (ECS) on Glenbrook Road, the crew working there will finish the low-probability test pits and arsenic removal.

Question from D. Feary, Community Member – Does asphalt contain arsenic?

D. Noble said he did not know whether or not asphalt contains arsenic.

b. Pit 3 Investigation Completion

D. Noble gave an update on the **Pit 3** A**ctivities**. AUES items continued to be found in the Pit, including military munitions, debris, laboratory glass pieces, and a few pieces of ceramics. Photographs were shown of the **Ceramics** that were found. The pieces would be consistent with those depicted in the Sgt. Maurer photograph. It is difficult to tell if they are actually pieces of the ceramic he was handling. To date, 891 barrels of soil have been removed and sampled.

The Pit 3 investigation was completed yesterday down to saprolite within the current Explosives Containment Structure (ECS) footprint. Two geologists from USACE and its contractor examined the entire floor of the excavation. They will write a report describing what they saw and certify that within that excavation footprint, saprolite has been reached in all areas.

S. Hirsh said that in addition to reaching saprolite, the crew has used metal detectors within the structure.

D. Noble stated that there are no other indicators of any other metal on the floor of the structure. He passed around a piece of saprolite (weathered bedrock) from the bottom of Pit 3 in a plastic bag. The regulatory partners and the RAB co-chair also went into the structure and inspected the completed pit.

A photograph was shown of the property on **Glenbrook Road Before the Pit 3 Excavation** and a diagram was shown of the **Pit 3 Investigation Extent.**

Because of the rise in site elevation, saprolite was reached within less than 1 foot of excavation at the curb, but saprolite was 9 feet down at the back of the property. Basically, a piece of the hillside 14 feet wide and 48 feet long was removed from under the ECS.

Question from L. Monsein, Community Member – What are the plans for the final property?

D. Noble said the land will be re-contoured to as it was before the investigation.

Photographs were shown of Tom Colozza, **USACE-Baltimore Geologist** and Tom Bachovchin, **USACE Contractor Geologist Inspecting Pit 3**, the **Excavation at Its Maximum Extent,** Greg Beumel, **RAB Co-chair Inspecting the Structure**, Ken Shott, **USACE Site Safety Officer** in the ECS, and Steve Hirsh, **EPA Inspecting the Structure**. A **Video** was shown of the **Completion of Pit 3**.

c. Extensions to the ECS

D. Noble presented the plans to extend the investigation around Pit 3 and build ECS extensions. There are plans to build extensions to the north, east and south of the ECS to further investigate potential nearby munitions. The extension to the south will go down Glenbrook Road along the District of Columbia right-of-way. The north extension is planned to extend 8-9 feet in front of the house, as there appears to be buried metal in the area. The east extension is planned to be 17 feet along the side of the house, to explore potential buried metal between the retaining wall and the house back to the chimney. The soil will be removed down to saprolite. The team will continue investigations until the metal is cleared.

A **Tentative Schedule for Additional Investigations** was shown.

Three Additional Investigation Areas	Projected Schedule: Starts March 10, 2008							
	March		April		May		June	
Constructing the North & East extensions (1)	3-5 weeks							
Investigating the North & East extension areas			2-4 weeks					
Constructing the South extension (1)					4-6 weeks			
Investigating the South extension area *							1-2 weeks	
* The earliest possible completion date would be sometime in May. A conservative estimated completion date is sometime in June.								
(1) The Shelter-in-Place Zone will be inactive during construction periods.								

Efforts began on construction of the first two extensions today and the plan is to begin intrusive operations sometime in April. Following intrusive operations in the first ECS extensions, the ECS extension to the south along the DC right-of-way will be initiated. The objects that will be investigated

under the south ECS extension are single point anomalies. The individual anomalies will be flagged and excavated under the ECS extension instead of removing the entirety of the soil from under the ECS.

Question from L. Monsein, Community Member – Why will there be digging on the 4801 Glenbrook Road property? I thought that property was completed.

D. Noble said that the digging performed previously was confined to Pits 1 and 2.

S. Hirsh said that when the Anomaly Review Board (ARB) initially met to discuss the anomalies on the D.C. right-of-way beside Glenbrook Road, the normal protocol for residential anomalies was followed and a certain percentage of the 67 single point anomalies listed was agreed upon for removal. However, because some of the munitions items recovered in Pit 3 appeared to have been some of the 67 single point anomalies, the ARB decided to remove them all.

D. Noble said that about 20 of the closest anomalies to the current ECS will be investigated under the south ECS extension. At that point, there will be a reassessment to determine whether high-probability protocols are needed for the remaining anomalies.

Question from William Krebs, Community Member — Is the basement dug into the saprolite?

D. Noble said it was either dug into it or very close to it.

Question from William Krebs, Community Member — So there is a minimal chance that there is anything under the house if the house is resting on bedrock?

D. Noble said that was a reasonable hypothesis.

Question from D. Feary – Are there any plans to put a well near the pit to test the hypothesis that this was the source of the high perchlorate in the area?

S. Hirsh replied that the groundwater meeting participants had decided to put a well halfway between MW-24 near the pit and Kreeger Hall to get a better understanding of the perchlorate concentrations. The regulatory partners are exploring the possibility of comparing perchlorate isotopes to see if the perchlorate in one spot is the same as in another. Soil samples were taken during the excavation and analyzed for perchlorate.

D. Noble stated that the two soil samples taken from near the drum found in the pit were non-detect for perchlorate. Two samples from the floor of the completed pit and one from each sidewall and will be analyzed for perchlorate, among other things.

Question from D. Feary – How far down is the groundwater in the wells on the street?

E. Hughes said it was about 20 feet down.

D. Noble said the floor of the excavated ECS was only about 1/2 foot below street level, so about 20 feet above groundwater.

Question from K. Slowinski – It was my understanding that the purpose of groundwater monitoring is to determine whether drinking water is impacted, to locate burials, or to determine the extent of a plume. How will one 150-ft monitoring well serve that purpose?

S. Hirsh said there is no final decision yet on how many wells will be installed. No work plan has been developed yet, but the EPA hydrogeologist was recommending installing three wells so the following questions could be better answered: How does the water flow? Is it flowing in small cracks in the rock? Does the contamination concentration increase or decrease as the depth increases? It is possible that television cameras could be put down a well to get a better understanding of the deeper geology. The District of Columbia hydrogeologist has been saying that the study should explore deeper flow systems for a while. Everyone is agreeing that information needs to be gathered on the deep flow system.

Question from K. Slowinski – Does it show the extent of the plume or locate burial pits?

S. Hirsh said it would show the plume extent with respect to the particular points where the wells were located and may help with respect to burials.

Question from K. Slowinski – Is there disagreement about putting in more wells?

S. Hirsh stated that there was no disagreement about installing more wells, rather that the five hydrogeologists had differing opinions about how to proceed. The USACE contractor went through the proposed wells well-by-well explaining why they were proposing the wells. The Groundwater Working Group is looking at installing 6 or 7 wells this year. Determining what wells to install and where to install them is an iterative process. The contractor will revise the proposed plan and there will be further discussions.

c. Update and Discussion of Munition Disposal Options

D. Noble said that disposal options were discussed at the last RAB meeting. The Lenny Segal report noted that most respondents felt bringing a treatment technology to the site was better than shipping Chemical Warfare Munitions (CWM) to an off-site treatment facility and that the Explosive Destructive System (EDS) was viewed very favorably by those familiar with it.

D. Noble introduced D. Feary of the Science Task Force, who was to present his findings on the National Academy of Sciences (NAS) study to the RAB. Rusty Fendick, from PM Non-Stockpile was also present to answer any general questions.

D. Feary presented the following ***Review of International Technologies for Destruction of Recovered Chemical Warfare Materiel***, published in 2006 by the Board on Army Science and Technology of the National Research Council. He noted that he undertook the review of the public document at the request of the RAB, and that others in the room were most likely far more expert than he in this area. He noted that options for CWM disposal include open detonation, on-site treatment systems (i.e., EDS), Stockpile incinerators, and commercial incinerators.

The U.S. is a signatory to the Chemical Weapons Convention (CWC), which prohibits the use of chemical weapons and mandates the elimination of existing declared stockpiles by April 29, 2007, with the possibility of a 5-year extension. CWC requires the declaration and destruction of such materiel within the CWC treaty deadline if it is unearthed prior to the deadline. The CWC allows signatory nations to exclude this CWM as long as the materiel remains buried. However, when this CWM is unearthed, it becomes recovered CWM, or RCWM, and must be destroyed. The CWC allows some negotiation of the timetable for the disposal of declared CWM, although generally it should be "destroyed as soon as possible."

The committee was interested in examining international technologies that could be implemented at sites where large quantities of buried materiel can be expected and where, consequently, higher throughputs might be desired than are achievable with current NSCMP equipment. The Non-Stockpile Chemical Materiel Project's (NSCMP's) explosive destruction system (EDS) is a well-proven system, but individual units can only deal with relatively small munitions at a slow rate.

The committee considered two approaches for removing munitions from large burial sites and concluded that a remove-and-dispose approach is to be preferred to a remove-store (in an intermediate holding facility)-dispose approach. The remove-and-dispose approach would minimize handling and storage of potentially deteriorated munitions, thus lowering risks. The committee assessed technologies based on process maturity, efficacy/throughput, and safety; public and regulatory acceptability in a U.S. context; and secondary waste issues. After its preliminary evaluation the committee focused on the three technologies assessed to be the best options: Controlled Detonation Chamber (CDC), DAVINCH Technology (Detonation of Ammunition in a Vacuum-integrated Chamber), and Dynasafe Technology.

The CDC is developed and manufactured by DeMil International, Inc., of Huntsville, Alabama. The technology was refined in Europe and is being used particularly in Belgium and the U.K. It appears well

suited for destroying a range of either chemical or conventional munitions. Its throughput is much higher than the EDS because there is no time-consuming neutralization step. The CDC also has the advantage of generating little or no liquid waste that requires subsequent processing, in contrast with the waste products of the EDS. The CDC does not qualify as a hold-and-test system like the EDS because the it is a flow-through system and offgases are not held and analyzed before release.

The DAVINCH technology was developed by Kobe Steel in Japan. It uses a large detonation chamber in which chemical munitions and their contents are destroyed when donor charges surrounding the munitions are detonated under a near vacuum. It does not require the use of a reagent to destroy the agent. Destruction occurs by shock wave, expansion and thermal heating from the detonation gases, and a fireball in the chamber. Offgases are produced that require some secondary combustion and filtration. It has three times or more throughput when compared to the EDS-2. It appears to be safe and effective. It is larger and less mobile than the EDS-2, although a transportable version is under development.

The Dynasafe Technology was developed and manufactured in Sweden. It is based on a static kiln detonation chamber inside a containment structure. Munitions are heated to 400°C-600°C, resulting in deflagration, detonation, or burning of the munition's explosive fill. The chemical agent in the munition is destroyed as a result of the shock wave from the detonation. No explosive donor charge is used, nor is a reagent needed to neutralize the agent.

The group's findings and recommendations were that the U.S. Army's EDS, is proven to be safe and effective, but has a low throughput rate, is limited in the size of the munitions it can handle, and generates a liquid waste stream that must be disposed of. The EDS will continue to have application, especially at small sites. For large burial sites, the group recommended selection of a detonation-type technology as the method for destroying recovered chemical munitions.

Question from G. Vassiliou, Community Member – How is the liquid waste generated by the EDS disposed of?

R. Fendick replied that it is analyzed, put into drums and shipped to a commercial storage and treatment facility.

Question from W. Krebs, Community Member – Are any of the other units mobile?

D. Feary, Community Member said that some of the units were, although not as mobile as the EDS.

D. Noble stated that the USACE has been digging in the pit since October 29th. At the beginning of the operation, the Baltimore District commander identified operational security guidelines. USACE has not been allowed to speak on the exact number, sizes, or types of fill of the munitions coming out of the pit. With the commander's approval, the team can now say that 2 chemical munitions were recovered from Pit 3. The Pit 3 investigation can be considered under the "small site scenario" with a very limited number of chemical fill items.

Question from C. Bermpohl, Audience Member – In 2003, three arsine-filled rounds were recovered. How were they destroyed?

D. Noble said that the rounds were taken off-site to a laboratory in Ohio where they underwent an acid digestion process.

Question from W. Krebs, Community Member – Is one of the two chemical items the arsine-filled item?

D. Noble affirmed that it is.

R. Fendick from PM Non-Stockpile was introduced to answer any other questions.

Question from D. Feary – There was a nice diagram of the EDS. Could you further explain the EDS?

A diagram was shown of the **EDS System Layout**.

R. Fendick said the EDS was brought to Spring Valley in 2003 for other chemical items. It is a steel vessel. The process involves placing the munition inside the steel vessel. The munition is placed inside the vessel with donor charges. The round is then sliced in half to have access to the contents. The EDS uses conical-shaped charges to detonate any charges inside the munition. After that is completed, the reagent chemical is pumped in, which varies depending on the fill of the munitions, and the vessel is rotated to assure good mixing of the neutralizing agent and break down of any remaining explosive.

After pumping and rotating the vessel, the contents are sampled to assure that the treatment goal is met. If it is met, then water is pumped in, heated up, the vessel is rotated again, and it is set overnight to cool. It can be sampled again at that point, and the water is pumped into drums and shipped off-site.

The preferred option is on-site treatment where it is feasible. APG-PM Nonstockpile has treated over 1,000 munitions in the EDS. The whole system would be placed inside an environmental enclosure and filter like the ECS being used at the intrusive investigation. The structure would provide secondary containment beyond the vessel itself. Air monitoring is also conducted within the environmental enclosure.

Question from L. Monsein, Community Member – How long does it take to process each round?

R. Fendick replied that it would take 1 to 2 days. Most munitions take 2 days. It takes a long time for the heat to dissipate.

Question from C. Bermpohl, Audience Member – Is the EDS used for disposing of chemical munitions or other munitions?

R. Fendick said it is used to dispose of chemical munitions. Other systems are better for destroying explosive munitions.

E. Hughes noted that the EDS came to Spring Valley in 2003 to take care of 15 chemical munitions. The Donovan Chamber (CDC) came for the conventional munitions.

III. Community Issues

M. Pritzker led the discussion on how to assist Councilmember Cheh's request to the Mayor's Office for follow-up of the Johns Hopkins University (JHU) study recommendations. During the discussion at the last meeting, the RAB commended Councilmember Cheh for being responsive to Spring Valley's needs and there was discussion on how to assist her in getting an additional allocation of funds. The initial study was paid for with taxpayer dollars and the results were that, in general, there were no health concerns in the community as a result of contamination in soil. JHU presented some recommendations, which are listed in the handout. There was discussion about asking JHU for a request for proposal (RFP) providing the cost to implement the recommendations and a timeline for 2008 priorities. Perhaps tonight the RAB can further discuss and agree on a plan to help the councilmember come up with the money.

D. Feary, Community Member stated that the first study was only intended to be a scoping study.

M. Pritzker, Community Member said that for that reason, the implementations become more important. The only way to proceed is to implement the recommendations. At the last meeting, the representative from the councilmember's office was asked where the $750,000 figure came from. How much is Johns Hopkins saying they need to implement the recommendations?

L. Monsein, Community Member said the RAB did not get an answer to where the figure came from. The original $250,000 went to a feasibility review of data. Reading through the recommendations, they are not for a study. JHU said it would be impossible to do a study because the number of data points needed to establish significance is so overwhelming that a study could never be conducted on this population. He asked the principal investigator if there could ever be an epidemiologically, scientifically sound study to prove the health effects of contamination on any disease in this area, and the answer was, "No. It will never happen." I would rather spend $750,000 on the elementary schools in the community than put it

into an examination where people have a miniscule chance of any ill effects. I think it is a waste of money.

M. Pritzker, Community Member stated that there are people in the community that are convinced that they have been harmed by substances in the soil. They may never be convinced otherwise. The report so far concluded that Spring Valley did not have a health issue. Other scientific reports have concluded the same thing. However imperfect the recommendations are, doesn't the RAB have an obligation to let the JHU folks finish their report and to support the councilmember's efforts to obtain more money to fund the report?

M. Bresnahan, Community Member said she could not disagree with either of the speakers. Her background is in nuclear science. The question is reminiscent of when people thought that if a person did not smoke, they would not get lung cancer. Now many people have lung cancer from nuclear exposure to radon below then levels of concern. This may have never come out if people had not insisted on further investigations in an area that was perceived to be out of the realm of possibility according to what was known at the time. I don't like to waste money. I am inclined to see a study on something that is out there. So many of those things have proven to add some value to an area of science.

W. Krebs, Community Member stated that it was an issue that ought to be examined. It was a lot of money and it ought to go to help the community. He questioned whether it is appropriate for the RAB to lobby for money for these issues, and suggested that the ANC or individuals should try to get funding.

M. Pritzker, Community Member said he felt that if the RAB does not have the function of trying to get to the end of the line, get the USACE out of the Spring Valley neighborhood, and finish the remediation, then is the RAB wasting its time?

Question from W. Krebs, Community Member – Does the RAB go off and lobby the District for money?

M. Pritzker, Community Member noted that the RAB did not go to Councilmember Cheh, she took the initiative. Would the $250,000 spent on the initial study be wasted if no one tries to at least get the estimated cost and what should be implemented of their recommendations.

W. Krebs, Community Member noted that it makes sense to find out how much it will cost.

S. Hirsh said that one of the JHU recommendations was to see if an epidemiological study makes sense.

D. Feary, Community Member agreed that a full epidemiological study is probably almost impossible. He thought the initial scoping study was helpful, based on what they could already see. If that initial series of statements could be amplified, it may be useful for the community. It is difficult to tell how much it would cost.

G. Vassiliou, Community Member said his impression from the community meeting at Horace Mann was that the community, as it was represented there, was concerned about health issues. As representatives of the community, the RAB needs to address that. The RAB is presented with a budget figure and immediately the decision has to be made on whether to move on with it. The RAB has to step back and have someone with true authority in the matter make a recommendation on the cost.

G. Beumel, RAB Co-chair stated that if the RAB tells Johns Hopkins $750,000 is available, that is exactly what it will cost to do something. The question should be framed on how much it would cost to implement the study, and, what would be better known it is completed? One of the suggestions is to look at additional years of the cancer registry data. They already went back to the beginning of the District of Columbia certified cancer registry. The only way to get additional years is to wait. Should the RAB recommend implementing their recommendations now, after waiting only a year, in terms of new data, or does the community need 5 years of additional data? When does JHU want to start? Maybe there is the step of going to Hopkins and saying what would the community get if the $750,000 was spent? Maybe the cost would be much less than that, or maybe so much more that it would be pointless to start. Maybe the community would get only a slightly expanded study and no new answers.

M. Pritzker, Community Member said the RAB seems to be in agreement as to what stage the process is in. The RAB will have to go back to Johns Hopkins and ask them to provide this information. Then based on this information, the RAB can decide what to do, if anything.

Tom Smith, ANC Commissioner, Audience Member presented the following four points of information:

- Councilmember Cheh came forward with the request to the Mayor's office for $750,000 because since the Hopkins study, residents of this community have come directly to her and sought her support for follow up to the Hopkins study.
- As the ANC Commissioner of Spring Valley and American University, he supports the request that has been made to the Mayor's office for follow up study.
- The request that has been made to the Mayor's office may not come forward. It will become clear when the budget is made public. There is probably very little this group could do to influence the decision at this point.
- Nothing earmarks the money in that request to JHU. The proposed follow up would have to go through the contracting process. To a certain extent, the RAB will not have exclusive control or influence or be able to shape what a research project should look like, should there be additional funding from the District of Columbia government to continue this process.

Bert Weintraub, Community Member said that although he did not have the document at the meeting, a couple of years ago, there was an assignment about what was the task of the RAB. DOD regulations were changing, and this RAB wrote what the members thought the aim of the RAB was. Maybe some of the questions being discussed now could be answered with that document.

L. Monsein, Community Member stated that B. Weintraub had reviewed the RAB operating procedures.

B. Weintraub, Community Member agreed that he reviewed the Army rules and the Spring Valley RAB came up with specific operating procedures. Members developed the RAB's mission statement and rules in conjunction with the overall DOD rule.

M. Pritzker, Community Member said if the people in the community were interested in implementing the recommendations, and the recommendations come out of a JHU study, it seems to make sense to at least ask them what it would cost. It would be of interest to the councilmember to have some details.

Question from D. Feary, Community Member – Shouldn't the RAB say what it recommends? It isn't the RAB's business what it would cost, because this group is an advisory body. The RAB should be talking to JHU to find out what the community could reasonably expect.

M. Pritzker, Community Member said his concern was that when $750,000 is mentioned, that is what they will say it would cost.

L. Monsein, Community Member noted that it is reasonable to go to JHU and have them help prepare an RFP describing what projects should be done and how much it would cost. That is then put out for bid to a number of people, including JHU. He expressed concern that the city might approve the $750,000 request without sufficient details. He said if the RAB had presented a proposal detailing what the group advised doing with a justification, along with the request, perhaps he might be supportive of it.

M. Pritzker, Community Member agreed that the $750,000 figure does not seem to come from any basis. Do we agree that at least the next step is to go back to JHU and request more information and decide if we want to do anything more with that? We don't have any information beyond the original recommendations.

J. Wheeler, Community Member noted that he agreed that it would not be possible or feasible to do an epidemiological study that would answer these questions. Even if it were possible, though, that will not go a long way toward convincing people of what they think. Many people in the past 4 or 5 years have

had cancer, and people think, when a coincidence occurs, it has to be what people in Spring Valley have in common that caused it. An epidemiological study can't deal with that type of human nature.

G. Vassiliou, Community Member said that the councilmember is moving forward on this because of the budget process. The money has to be allocated otherwise the community will have to wait another year. The RAB has to address whether a study is the right thing to do or not before anyone even talks about how much money. The people from JHU who did the initial study are part of that decision. They have to tell the RAB if they believe that conducting a study could really result in anything substantive. Then, if this is the case, put it before the RAB.

Question from M. Pritzker, Community Member – So the next step is that the RAB agrees that JHU should be contacted and asked what they could provide with further study, and see what they reply.

Next Steps

G. Beumel said that in the next 30 days the RAB will contact JHU regarding options for and the cost of a follow-up report.

IV. Open Issues and Future RAB Agenda Development

1. Next Meeting: April 8th

- Update on OU-3 (Glenbrook Road) Project Area
- American University Public Safety Building Update
- GIS Presentation
- Groundwater Study Planning Update

V. Public Comments

No additional public comments were brought forward.

VI. Adjourn

The meeting was adjourned at 9:20 p.m.